



Effects of leaders' behavioural integrity on followers cooperation levels

by

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Biographical Summary

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Resumo

O alinhamento percebido entre as palavras e ações de um líder, também conhecido como a "integridade comportamental" de um líder, é um tema muito recorrente na sociedade de hoje. Este estudo pretende medir o impacto que um líder com integridade comportamental tem sobre os níveis de cooperação dos seus seguidores. Este é um assunto relevante porque a liderança é geralmente associada ao sucesso ou insucesso das empresas e a congruência de um líder entre suas palavras e ações já é defendida por alguns estudos por ter grandes efeitos sobre os trabalhadores, tais como na sua lealdade, criatividade e percepção de risco.

Os dados usados neste estudo foram recolhidos através do método experimental usando um design "between-subjects" com um total de 105 participantes. Em cada experiência, os participantes jogaram o "Jogo do bem público" onde realizaram uma tarefa de tomada de decisão onde foram sujeitos a diferentes condições que corresponderam à manipulação da variável independente. A variável dependente foi o montante de dinheiro que cada um dos participantes contribuiu para o projeto comum do grupo no "Jogo do bem público". A hipótese em estudo propõe que o líder com comportamento íntegro tem um efeito positivo sobre a cooperação entre os membros da sua equipa.

Os resultados suportam a hipótese quando os dados são controlados para a variável "Game understanding questions". Os dados indicam que quando os seguidores percebem o seu líder como tendo um comportamento íntegro eles cooperam significativamente mais do que quando percebem o seu líder como tendo um comportamento não íntegro. Além disso, os resultados também sugerem que os seguidores que percebem o seu líder com tendo um comportamento não íntegro cooperam significativamente menos do que os membros de um grupo com um líder ausente.

Palavras-Chave: Liderança; Integridade Comportamental; Cooperação;

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Abstract

The perceived alignment between leader's words and deeds, also known as a leader's "behavioural integrity", is a very recurrent theme in today's society. This study intends to measure the impact that a leader with behavioural integrity has on his followers and analyse the changes in their cooperation levels. This is a relevant subject because leadership is usually associated to the success or non-success of companies and the leader's congruence between his words and deeds is already defended by some studies to have big effects on employees, such as in their loyalty, creativity and risk perception.

The data used in this study was collected through the experimental method using a between subjects design in a total of 105 participants. In each experiment, a group of participants, played the "Public goods game" where they performed a decision-making task and were subjected to different conditions that corresponded to the manipulation of the independent variable. The dependent variable was the monetary amount that each participants contributed to the common project of the group in the "Public goods game". The hypothesis being studied proposes that a leader with behavioural integrity has a positive effect on the cooperation levels of his/her team members.

The results support the hypothesis when the data is controlled for the variable "Game understanding questions". The data indicates that when followers perceive their leader to have behavioural integrity, they significantly cooperate more than when they perceive the leader to have an inconsistent behaviour. Moreover, the results also suggest that followers who perceive their leader to have an inconsistent behaviour cooperate significantly less than members of a group with an absent leader.

Key words: Leadership; Behavioural integrity; Cooperation;

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Experimental Group Acronyms

CB: The leader demonstrates a consistent behaviour where his actions are in accordance with his words;

NCB: The leader demonstrates an inconsistent behaviour where his actions aren't in accordance with his words;

N: The leader is absent;

1. Introduction

A leader is someone who is able to exercise control over his/her followers and for that reason he/she is an important figure who is capable to influence the way they think and therefore decide (Wood, 2015). Leadership is not only a vast, interesting and much discussed theme but also relevant in a management context. It's common sense that it is a very important factor for the success of a company because it influences the workers (followers) motivation and decisions and therefore impacts their performance.

The congruence between a leader's words and deeds (Simons, 2002), also known as behavioural integrity, is one of the factors that we believe may influence the process of decision making of every follower. Several researches (Simons et al. 2012; Palanski and Vogelgesang 2011) support this idea, defending that when a leader acts in accordance to his/her words he/she is able to influence several follower's attitudes at work, such as: affective commitment towards the organization, risk taking and creativity.

Cooperation, the act of an individual working together with someone else towards a common or mutual benefit, it's extremely relevant to organizations due to the high importance that all elements within the organization work together and not against each other, dedicating their individual effort, time, and resources to collective projects (Smith et al. 1995). This reason adding to the literature gap there is on the subject were the reasons we chose this variable to study.

Although the importance of a good leadership in management has been widely discussed, there are few studies on the influence of behavioural integrity on followers, more specifically on their cooperation levels. The aim of this study is to determine the impact of a leader's behavioural integrity in the follower's cooperation levels. Practically none of the studies reviewed uses experimental methods to draw conclusions, which is what it is intended in this dissertation. We intend to achieve the objective of this dissertation with an experimental method by testing out a sample of at least 90 students. It is important to have information gathered through experimental methods and not only through surveys and interviews because under controlled set ups and strict conditions, with experimental

research it is possible to manipulate a variable to identify a cause-and-effect relationship, whilst non-experimental researches cannot conclude with absolute certainty that X leads to Y .

Next, a literature review on the leadership traits practices and styles will be made, an analysis of the behavioural integrity concept and its constructs as well as some behavioural integrity effects will be revised and at the end a definition and some possible factors that may influence cooperation levels will be presented.

The method part presents the experimental design, the identification of the research variables and the description of the procedures and instruments used. Then, the results obtained are discussed, the main conclusions of the research are presented and the limitations and some suggestions for future studies are indicated.

2. Literature Review

In this chapter, we are going to review the literature on leadership, specifically, on the styles, practices and the traits of a good leader as well as his/her impact on followers' behaviour. After that, a review on behavioural integrity literature will be conducted in order to understand the notion, constructs and potential effects on followers' attitudes at work. Finally, it will be done a literature review on cooperation not only to understand the concept but also some examples of things that might possibly influence people's cooperation levels.

2.1 – The traits of a leader

Throughout human history, people have always been living and working together in groups, therefore, the roles of “leaders” and “followers” have been present since the beginning. Today, leadership is one of the most debated topics in the social psychology and management paradigm, existing several approaches on this matter.

Being “to determine the impact of a leader's behavioural integrity in the follower's cooperation levels” the aim of this thesis, it is important to review the literature on leadership in order to understand what exactly is a leader, his/her attributes, behaviour and in what ways can he/she influences his/her followers.

It is commonly accepted by the scientific community that leadership is a process in which one person (leader) is able to ensure the help and support of others (followers) in the achievement of a common task through social influence (Chemers, 1997).

Some of the first researches on leadership claimed that in order for a person to be a successful leader it had to be good looking, however, this approach was quickly rejected. Before reaching a more complete and accepted theory about what it takes for a person to become a good leader, several theories came along the years and were criticized and considered uncomplete. For example, Stogdill (1948) examined 124 personality attributes studies and concluded that individuals do not become leaders simply because of any

combination of personality characteristics. He came to the conclusion that the nature of personality attributes of any leader must have some significant association with the personal qualities, activities, and aspirations of the people being led. Later, after conducting more personality traits studies, Stogdill (1974) found that the ownership of certain skills and personality characteristics like adaptability, persistence, alertness to the social context, assertiveness, dependability, cooperative spirit, enthusiasm, self-confidence, resilience and willingness to take responsibility increased the possibility of a leader being effective, but didn't necessarily mean the leader was already effective.

In addition, Kouzes et al. (1980) came to the conclusion that there were 4 traits that stood out from the others and that were the most common in good leadership, they were: being honest, forward looking, inspiring, and competent. Both Stogdill, Kouzes and Posner were criticized on their studies and theories due to being over simplistic and failing to take into account several other personal characteristics and attributes that might influence the development of a successful leader (Conger & Kanungo, 1998).

Zaccaro et al. (2004) came up with a theory that it is considered to be an accurate approach and serves as support to several studies (Judge 2002, Colbert 2004), the Trait Leadership Theory.

The Trait Leadership theory defends that the characteristics that make leaders different from followers (the so called "leader traits") are not only personality attributes but also cognitive abilities, values, motives, social and problem-solving skills, and expertise. Zaccaro et al. (2004) defines them as coherent and integrated patterns of personal characteristics that reflect a range of individual differences who promote consistent leadership effectiveness across a variety of group and organizational situations.

The author defends that the factor that most influences not only the leader's traits but also his process of becoming a leader is the external environment that surrounds him/her, the conditions, entities, events, and factors that influence his/her choices. He also states that this process of becoming a leader includes 3 steps: emerging as a leader, demonstrating effectiveness, and advancement / promotion.

Zaccaro et al. (2004) points that the characteristics a person has to possess in order to be perceived as a good leader are: extroversion, agreeableness, conscientiousness, openness, charisma, honesty, intelligence, creativity, achievement motivation, need for power, oral/written communication, interpersonal skills, general problem-solving, and decision making. These attributes help predict not only how good a leader is but also how effective he is going to be.

Although the trait leadership theory is useful to identify the typical characteristics of a good leader, it not only fails to account for the many behaviours a leader normally assumes but also to analyse the effects on follower's outcomes. Next, we are going to analyse the different practices and actions a leader usually takes to solve problems, as well, as the different methods used to manage a group of individuals and the respective effects on their followers.

2.2 – The behavioural patterns of a leader and the impact on followers

Kouzes and Posner (2012) identified common patterns in effective leadership behaviours. They concluded that there are 5 common practices in good leadership that correspond to a set of behaviours that enable leaders to effectively deal with daily challenges with positive effects on followers: "Model the Way", "Inspire a Shared Vision", "Challenge the Process," "Enable Others to Act" and "Encourage the Heart".

Regarding the “Model the way” practice, Kouzes and Posner (2012) defend that good leaders lead way by creating standards of excellence and setting an example for their followers to pursue. They settle the principles regarding the way people should be treated and the way goals should be pursued. In other words, leaders provide through guidance the direction and meanings of employees' activities, therefore, leaders must act in accordance with their words. Only if the practices of the leader is consistent with his/her beliefs and values, will followers be better in anticipating correctly what is expected of them. It was found that when leaders have behaviours that correctly “model the way” they generate job satisfaction (Ingersoll et al. 1996) and higher productivity (Loke, 2001).

Regarding the “Inspire a shared vision” practice, Kouzes and Posner (2012) defend that good leaders have behaviours that envision the future, creating an ideal and unique image of what the organization can become. Through persuasion, leaders pass their dreams and transmit their visions to their followers and get them to see exciting possibilities for the future. It was found that when leaders have behaviours that correctly “Inspire a shared vision” they generate job satisfaction and organizational commitment (Loke, 2001).

Regarding the “Challenge the process” practice, Kouzes and Posner (2012) defend that good leaders are always on the lookout for ways to improve their organization. This includes taking risks and learning from mistakes. It was found that when leaders have behaviours that correctly “challenge the process” they stimulate their employees to have higher productivity, job satisfaction and organizational commitment. However, too much emphasis on this leadership behaviour may contribute to lower productivity and job satisfaction (Loke, 2001).

Regarding the “Enable others to act” practice, Kouzes and Posner (2012) defend that good leaders foster collaboration through their behaviours and build motivated teams through valuing each team member and mutual respect. Good leaders make efforts in order to make each follower capable and powerful and they try to promote an atmosphere where trust and dignity are praised values. In other words, good leaders have behaviours where they empower their employees with knowledge and increase employees' self-efficacy to enable them to act autonomously in order to achieve organizational goals. It was found that when leaders have behaviours that correctly “Enable others to act” they generate job commitment and satisfaction (McDermott et al. 1996), more autonomy in the workplace (Kanter, 1993) and higher productivity (Sabiston & Laschinger, 1995). However, it was also found out that if managers overly involve employees in planning and making their own decisions, they may adversely lower employees' productivity (Loke, 2001).

Regarding the “Encourage the heart” practice, Kouzes and Posner (2012) defend that good leaders recognize the contributions and efforts each individual makes in order to transmit hope and determination to his followers. Good leaders try to implement and make their followers understand the reward system so that they are able to see the impact of their performance and the equity of the scheme and this way encouraging them and making them

believe that their effort will lead to reward. It was found that when leaders have behaviours that correctly “encourage the heart” they make their employees increase their productivity levels (Loke, 2001). Loke (2001) states that in times of big tension, a leader that assumes behaviours that “encourage the heart” of employees has a positive effect on employees organizational commitment.

Several psychology authors (Bass and Stodgill 1990, Bell 2013) defend that there are many styles of leadership such as: autocratic leadership, laissez-faire, democratic leadership, transactional and transformational leadership. Lewin et al. (1939) identified autocratic leadership, laissez-faire and democratic leadership as three major leadership styles despite of further research indicating more distinct leadership styles.

Autocratic leaders are defined as leaders who make every decision, dictate all the work methods and processes and have no problem in criticizing or praising their followers (Lewin et al. 1939). Lewin et al. (1939) defends that there is a clear division between the leader and the followers and that the leader takes decisions with little or no input from the rest of the group.

Opposing to the previous leadership style (autocratic) there is a totally different leadership style, democratic leadership (Pirraglia, 2005). Lewin et al. (1939) defines democratic leaders as leaders who despite of having the final say in the decision-making process, encourage their followers to participate. In a more recent definition, a democratic leader is defined as someone who is able to consistently influence his/her followers with democratic principles and processes such as self-determination, equal participation, and deliberation (Dahl, 1989; Fishkin, 1991).

Finally, the laissez-faire leadership, also known as delegative leadership, unlike the previously presented styles, is an absent type of leadership. Delegative leaders offer little or even no guidance at all, leaving decision-making up to the group members and even comments on member activities, unless questioned, are very infrequent (Lewin et al. 1939).

All these three leadership styles, seem to have different effects on followers. Foels (2000) study shows a small tendency for groups experiencing democratic leadership to be more satisfied than groups experiencing autocratic leadership because people tend to prefer to be

allowed to participate in group decisions than to be subjected to dominative or manipulative leadership. Besides higher levels of satisfaction, democratic leaders also tend to make employees feel more competent and committed to an organization (Huang et al. 2006). Some studies show that autocratic leaders can also produce positive effects on followers. Shaw et al. (1955) study shows that autocratic leadership produces better performance but lower satisfaction than democratic leadership. Cremer (2003) conducted a study whose results seem to indicate that group members were more likely to exit their group if they were supervised by an autocratic style leader than by a democratic or laissez-faire style leader. It was also found that followers respond with more cohesiveness of group decision to autocratic than to democratic leadership (Meade, 1970). Although a laissez-faire leadership style seems to have a positive impact on satisfaction of followers (Lippitt, 1960), several studies show that this type of leadership can also have several negative effects on followers. Laissez-faire leadership is not only positively correlated with role conflict, role ambiguity, and conflicts with co-workers (Einarsen, 2007) but also seems to lead to lack of motivation in comparison to other leadership styles (Lewin et al. 1939).

Other two types of leadership that are commonly distinguished in several studies are transactional and transformational leadership (Judge and Piccolo 2004, Lowe 1996, Avolio et al. 1999). A transformational leader is described as being someone who intellectually stimulates followers, articulates a vision of the future that can be shared with them, is focused on higher order intrinsic needs and pays high attention to individual differences among people (Bass, 1990; Burns, 1978). A transactional leader is described as being a person that takes initiative in making contact with others with the purpose of exchanging tangible rewards for the work and loyalty of the followers (Kuhnert and Lewis, 1987; Burns, 1978). While a transformational leader has a behaviour in which he tries to humanize and connect with his followers by trying to understand their individualities, transactional leaders tend to have a more distal relationship with his followers, having a more cold hearted, disciplinary approach, rewarding followers when they achieve the purposed goals and punishing when they don't.

Pieterse (2009) conducted a study with a sample of 230 employees from a government agency in the Netherlands and aimed to assess how the follower's innovation levels reacted

to a transformational leader. Followers were asked to rate their own level of psychological empowerment and the level of transformational and transactional leadership of their primary leader, followers innovative behaviour was measured by ratings from the supervisors of the participating employees on a scale. The findings of this study showed that while transactional leadership had a negative relationship with innovative behaviour when psychological empowerment was high, transformational leadership on this condition was positively related to innovative behaviour.

Mackenzie et al. (2001) study was conducted in a large national insurance company and comprised a sample of 477 sales agents. This study aimed to evaluate how much a transformational and transactional leader behaviour influenced the sales performance and organizational citizenship behaviours of salespeople. The conclusions showed not only that transformational leadership had very good results in terms of the performance of the salespersons, even above the sales goals, but also that transformational leader behaviours actually had stronger direct and indirect relationships with sales performance and organizational citizenship behaviour than transactional leader behaviours.

Although studies on constructive leadership practices still dominate leadership research, there is an increasing number of studies on destructive leadership which study the effects of bad leadership on followers (Schyns and Schilling, 2012). It's hard to define destructive leadership because some researchers claim that leadership can by definition only be positive and, for that reason, the term "destructive leadership" is a combination of words that have opposite meanings (Yukl & Van Fleet, 1992). Thoroughgood (2012) defines destructive leader behaviour as acts committed by a leader voluntarily, which are perceived as harmful towards followers and/or the organization. Einarsen (2007) considers two separate dimensions of destructive leadership behaviour: behaviour directed towards followers and behaviours directed towards the goals, tasks and effectiveness of the organisation. He defines destructive leadership as a systematic behaviour committed by a leader that violates the interest of the organisation by undermining and/or sabotaging the organisation's goals, tasks, resources, and effectiveness and/or the motivation, well-being or job satisfaction of subordinates.

Regarding the effects of destructive leadership on followers, Schyns and Schilling (2013) concluded through their studies that there is a strong positive correlation between a leader's destructive behaviour and negative attitudes towards the leader. Their study findings show that destructive leadership provoke resistance from followers towards the leader and he/she will find it difficult to convince the follower to 'follow', which will ultimately challenge his/her own position. Burris et al. (2008) argue that when destructive leadership is present in an organization, there is also a big possibility that the negative feelings towards the leader turns also to negative feelings towards the organization. Woestman and Wasonga (2015) studies suggest that destructive leadership behaviour has a strong negative correlation with job stress, and consideration for leaving the job.

These studies on laissez-faire, autocratic, democratic, transactional, transformational leadership and destructive behaviours showed that not only all of them had considerable effects on the followers behaviour but also effects with different intensities and on different followers behavioural aspects such as motivation, innovation, performance and job satisfaction. So after being shown that different leadership styles with different behaviours have different effects on followers, it's time to focus in the specific type of behaviour we will consider in this dissertation, behavioural integrity, and see what type of effects it provokes on followers.

2.3 – Behavioural Integrity

Behavioural integrity is described as being the perceived pattern of alignment between an actor's words and deeds (Simons, 2002), or basically the perception of the consistency between a person's words and actions also including "promise-keeping". Behavioural integrity refers to a specific type of congruence and should not be confused with the definition of integrity which refers to the quality of being honest and having strong moral principles and values (Killinger, 2010). Managers' behavioural integrity is a topic growing in importance and it has even been linked to being an important factor in companies' profitability and success. Several authors (Robinson 1996, Rotter et al. 1967) state that

behavioural integrity is a concept also highly related to trust, credibility, and psychological contract.

“Trust”, has been defined as being the expectations or beliefs of a person about the likelihood that the future actions of another person will be beneficial, or at least not detrimental, to one's own interests (Robinson, 1996). In a definition that it is more related to the behavioural integrity concept, Rotter (1967), defined trust to be an expectative of an individual that the word, promise, verbal, or written statement of another individual or group can be relied on. Followers’ level of trust on the leader is influenced by the congruence between what he or she says and what he or she does and when a leader doesn’t show a consistent behaviour, naturally, the levels of trust from the followers’ on the leader decrease (Simons, 2002). In an organizational context, Davis and Rothstein (2006) stated that in an employment relationship between the manager and employees, one of the most important factors is trust and it is highly linked to the followers’ affective commitment to the company and therefore it has an impact on the employees’ performance. A manager that shows behavioural integrity may cause a feeling of trust in his/her employees and ultimately affect their cooperation levels. Gambetta (1988) argues that when a manager trusts his/her employees and they perceive it, they tend to trust him/her back and Gambetta (1988) adds that this reciprocity will ultimately influence employees’ cooperation behaviour as cooperation requires the belief that one is trusted by others.

Another construct related to behavioural integrity is credibility, which is an antecedent of trust and an assessment of believability. It is an evaluation of whether a given person is likely to provide messages that will be reliable guides to belief and behaviour (O’Keefe, 1990). Just as trust, bigger congruency between a leaders espoused (stated values and norms that are preferred by the leader) and enacted values (the values and norms exhibited by the leader) means a higher level of his credibility, if a leader had multiple non-consistent behaviours in the past, followers won’t believe that he will “walk is talk” in the future, and therefore they will perceive him as being non credible. Mccroskey and Young (1981) defend that credibility is a very useful and potent tool of persuasion and therefore when leaders deteriorate that credibility they are damaging that tool, forcing themselves into

additional actions to show when they really mean something in order for their followers to believe them.

Also related to the concept of trust and credibility there is the concept of psychological contracts, Rousseau (1989) defined psychological contracts to be individual beliefs in a reciprocal obligation between an individual and his organization. Robinson and Rousseau (1994) state that psychological contracts are perceived explicit or implicit promises and, therefore, the breach of a psychological contract results in the followers believing that their leader has failed to fulfil his or her promises (Robinson & Rousseau, 1994). Several scholars defend that in an organizational context, psychological contracts greatly affect the employment relationship and employee behaviour. They state that their infringement is strongly associated with lower levels of job satisfaction and organizational commitment, due to feelings of injustice and betrayal on the employees' part and consequent deleterious effects on satisfaction with the job and the organization, making psychological contracts a serious issue to be dealt with.

After this, it is easy to conclude that all this behavioural integrity proxy constructs are related to each other. When a leader doesn't show behavioural integrity and fails to fulfil his verbal promises in to actions, the psychological contract between the leader and followers is broken, levels of trust of the followers decrease and the leader is seen as less credible.

Leaders with behavioural integrity are believed to have relevant influence on followers' creativity and risk taking. Palanski and Vogelgesang (2011) suggest that the followers' perceptions of their leader's behavioural integrity positively predicts their intention to think creatively and to take risks. Perceptions of espoused (stated values and norms that are preferred by an organization) and enacted (the values and norms exhibited by the employees) organizational values also showed to have influence on employees, but this time on their affective commitment with the company (Howell et al. 2011). When the espoused values defended by a company don't correspond to the day-to-day behaviour of organizational members, the affective commitment of the employees is the lowest and when the enacted values are congruent to the espoused values, the affective commitment is the highest.

Previous research suggest that behavioural integrity correlates positively to an authentic leadership style (Simons et al. 2012) as well as to transformational leadership (Ullah, 2013). When there is congruence between a transformational manager's words and deeds, employees are not only more likely to have a perception of freedom in their company, but also to be more motivated and more easily satisfied with the ways conflicts are resolved by their leader (Ullah, 2013). Regarding authentic leadership and behavioural integrity, Simons et al. (2012) defend that authentic leadership is actually related to consistent behaviours because authentic leaders are perceived by their followers to remain true to their self in their behaviour, to be open and non-defensive in their interaction with others, to "walking their talk" and delivering on their promises. They also defend that authentic leadership and leader behavioural integrity are positively related to follower work role performance and follower affective organizational commitment. (Simons et al. 2012)

To sum up, according with the previous mentioned authors, a leader who shows behavioural integrity causes his/her followers not only to be more productive, but also have higher affective organizational commitment, to think more creatively and take more risks. However, there are no findings on the effects of a leader with behavioural integrity on followers' cooperation levels which it is what is intended to analyse in this dissertation.

2.4 – Cooperation

As previously stated, the main aim of this dissertation is to analyse the effects that a leader who shows behavioural integrity has on his/her followers cooperation levels, so, it's not only important to understand the concept but also to see some examples of things that might possibly influence peoples cooperation levels.

Social scientists define cooperation has being the act of an individual working together with someone else towards a common or mutual benefit. Aquino and Reed II (1998) and De Cremer (2005) define cooperation as being the exact opposite to competition where individuals try to maximize personal benefits at the expense of collective benefits. Additionally, Smith et al. (1995) define cooperation as the contribution of individual effort, time, and resources to collective projects. It's crucial for all organizations that their workers

work actively with rather than against each other's and it is often very important they put an extra effort to interdependent tasks and actions that benefit the group or organization.

There are several possible reasons for individuals to cooperate more in an organizational setting but also several reasons to cooperate less. Unaccountability is one of the main reasons that leads to people cooperate less and in consequence, the "free riding problem" arises. For example, a person may not invest enough energy and time in a team project if he/she knows that once the project is completed the whole team will receive equal benefits whatever the contribution each of them made and therefore, projects as well as the company interests may fail due to the lack of cooperation by the members of the group. (Kerr, 1983; Organ, 1988).

Several studies indicate that members of a team who show signs of cooperation compared to those in competition exchange resources, assist each other, and manage conflicts constructively so that they are all successful (Johnson et al. 1983; Tjosvold, 1986). So, due to cooperation being a key factor in teamwork and a core organizational process driving organizational effectiveness (Chen et al. 1998; Smith et al. 1995) that it is crucial to the functioning of any organization (Katz, 1964) it's important to understand what really are the motives that take individuals into cooperating in social and organizational dilemmas.

Leadership is one of the factors that may foster cooperation. Although leaders may differ in their capabilities or personalities, as previously stated in this literature review, there is rising consensus that leadership in all its forms helps increase cooperation and efficiency in social interactions, for example in team work (Foss, 2001). Leaders, for example, promote cooperation by restricting self-interested actions in the organization and utilizing sanctioning systems in which cooperation is rewarded and non-cooperation is punished (Carnevale et al. 1995). Rivas et al. (2009) is another advocate that leaders influence followers' cooperation levels, defending that a leader's example is determinant to his/her group of followers, heavily influencing their tendency to cooperate. When a leader demonstrates to be cooperative, his followers tend to follow him and reciprocate with similar cooperation levels (Rivas et al. 2009).

Reciprocity is also one of the factors that promotes cooperation, it is based on the expectation that people will respond to each other in a similar way. In group situations,

reciprocity can be a very effective means to promote and sustain cooperative behaviour (Ostrom, 1998).

Ostrom (1998) also defends that trust is another factor that promotes cooperation. He defends that trust refers to the expectations of a person regarding other's actions in situations where one has to act before others. When a person has to rely on other to do the right thing, trust is a very important factor (Ostrom, 1998).

Other factor that promotes cooperation is "Reputation building". An individual during his life, experiences several situations and it is constantly developing a subconscious opinion about the people surrounding him/her and therefore in the perspective of that individual the people surrounding him/her create a reputation. Andreoni (1988), developed a theory regarding reputation building where he argues that people might make judgements on a person's reliability and trustworthiness based on his or her reputation when in situations demanding collective action. With this, Andreoni (1988) also defends that it is expected that groups formed by individuals that know each other to have higher levels of cooperation than groups formed with complete strangers.

People may also simply be motivated to cooperate only because they take pleasure in others' pleasure (Dawes and Thaler 1988).

3 – Summary, objectives and hypothesis of investigation

The aim of the present study is to investigate the effects of a leader's behavioural integrity on his/her followers' cooperation levels, so, in the previous chapter, a review on the concepts of leadership, behavioural integrity and cooperation was made.

In the review on the leadership literature, we started with an analysis on several traits theories in order to have an understanding of the typical personality attributes and cognitive abilities of leaders. Although, traits leadership theories are useful to identify the typical characteristics of a good leader, they not only fail to account for the many behaviours a leader normally assumes but also to analyse the effects on follower's outcomes which is what it is intended to do in this dissertation. So, in order to have a better comprehension of a leader's behaviour and the effects he/she produces on followers, a review on the typical practices (Model the way, Inspire a shared vision, Challenge the process, Enable others to act and Encourage the heart), styles of leadership (autocratic leadership, laissez-faire, democratic, transformational and transactional leadership) and possible effects on followers' attitudes as well as an analysis of the concept of leaders destructive behaviours was made. Summarizing the review on this topic, we could conclude that leaders have a significant impact on followers, either positive or negative.

Following leadership, the topic reviewed next was behavioural integrity. In the review of the leadership traits, Zaccaro et al. (2004) mentioned "honesty" as a typical characteristic present in a good leader, in this instance he was referring to general fairness and straightforwardness of conduct, but in this chapter, the analysis was on the effects of a more specific type of honesty/integrity which is leaders' congruence between words and actions (behavioural integrity). Definitions and constructs, as well, as some possible effects that a leader with behavioural integrity might produce on followers' attitudes at work were presented in this chapter. The concept reviewed in this chapter, behavioural integrity, seems to have a relation to the "Model the way" practice previously reviewed in the good leadership practices literature because a leader in order to be effective in "Modeling the way" of his followers he has to have an integrate behaviour, his words have to match his

actions, he is an example to his followers so he has to give a good one in order for them to act the same way. Summarizing this topic, we can conclude that when followers perceive their leader to show behavioural integrity, this has an impact on followers' attitudes at work such as: creativity, risk taking, organizational commitment and productivity.

Finally, regarding cooperation, a review on the concepts and constructs was also made, possible advantages of cooperation were indicated and factors that might possibly influence cooperation were presented, including leadership who seems to foster cooperation and effectiveness on social interactions on followers.

As said before, we intend to see if when a leader fulfils his promises and has his actions in line with his words has an effect on his followers' cooperation.

In order to see this, first, a comparison between the effects of a leader with behavioural integrity on followers cooperation and the effects of leader whose actions aren't aligned with his/her words, so with a destructive leadership behaviour, must be done, therefore, the first investigation hypothesis is:

- Hypothesis 1: Followers who perceive high leader's behavioural integrity, cooperate more than followers who perceive lower leader's behavioural integrity.

Then, a comparison between the effects of a leader with behavioural integrity on followers cooperation and the effects of a more absent, laissez-faire style of leadership must be done, therefore, the second investigation hypothesis is:

- Hypothesis 2: Followers who perceive high leader's behavioural integrity, cooperate more than members of a group without a leader;

Finally a comparison between the effects of a leader whose actions aren't aligned with his/her words, so with a destructive leadership behaviour, and the effects of a more absent, laissez-faire style of leadership must be done, therefore, the third and final investigation hypothesis is:

- Hypothesis 3: Followers who perceive low leader's behavioural integrity, cooperate less than members of a group without a leader.

4. Method

In this “Method” section, a description of the experiments conducted, procedures and instruments utilized and the sample considered will be presented.

4.1 – Sample

The total sample consisted of 105 students from several universities in Porto aged between 18 and 69 years old. The average age of the participants is 23.1 years old, where 53.33% are males and 46.67% are females. All the participants are currently living in Portugal but some of them were born in different countries, such as: Angola, Brazil, Colombia, Mexico, Spain and Venezuela.

Regarding the self-reported socioeconomic level of the participants, most subjects have a medium socioeconomic level (73.33%), 18.10% answered “low” and 8.57% of the participants have a high socioeconomic level.

4.2 – Experimental design

This study uses a “between-subjects” design which means that each participant is only tested once. There are separate groups for each condition and the participants are randomly allocated on the different conditions.

In each experiment, a group of participants, in a computer room of a college, play the “Public goods game” where they perform a decision-making task and are subjected to different conditions that correspond to the manipulation of the independent variable.

At least thirty participants are included in each of the two experimental conditions and at least another thirty participants are allocated in the control group. The two experimental

conditions are: “The leader demonstrates a consistent behaviour where his actions are in accordance with his words” (CB) and “The leader demonstrates an inconsistent behaviour where his actions aren’t in accordance with his words” (NCB) and in the control group, the leader is absent (N).

The manipulation of the independent variable involves the degree of compliance of the leader with the experiment schedule. In the experiments with the conditions “CB” and “NCB”, the leader not only warned in advance the participating subjects for the importance of not being late and if possible to arrive at least five minutes before the start of the experiment but also stated that punctuality is a value that should be cultivated and therefore he promised to be in the experiment room 10 minutes before the start. In the condition “CB”, the leader had a consistent behaviour with the warning and fulfilled his promise arriving on time for the experiment, in the condition “NCB” the leader had an inconsistent behaviour arriving purposely thirty minutes late. The dependent variable is the monetary amount that each participants contributed to the common project of the group in the “Public goods game”.

Table 1- Experimental Design

Leader’s behaviour	Leader demonstrates a consistent behaviour (CB)	Leader demonstrates an inconsistent behaviour (NCB)	Leader was absent (control group)
Number of participants	42 participants	30 participants	33 participants

4.3 – Procedures and instruments utilized

The task was carried out in a computer room, where the participants played the “Public goods game” and then answered some questions through the Qualtrics platform. The goal here was to understand how much and why the participants were willing to contribute to the common project of the group in the different conditions, and for that, the following instruments were utilized:

- a) “Public goods game”: Each participant, through the Qualtrics platform, played this game, which consisted in a dilemma in which each person virtually received 2 euros and then had to decide how much money to keep and how much money to contribute to “the common project of the group”. The participants would be randomly assigned in groups of 4, and the amount of money each member decided to contribute to “the common project of the group” would be doubled and then split by all group members. The amount of money each participant would decide to keep to themselves, at the end of the experiment, each person would receive that same exact amount of money. After seeing the screen with the instructions of the game, all the participants were presented with a decision slider, where they had to choose the amount of money to contribute and the amount of money to keep. (Instructions of the game can be consulted in Annex 1.1)

- b) Game understanding questions: After the participants played the game, they had to answer a set of four questions in order to measure their understanding of the game. (Questions can be consulted in Annex 1.3)

- c) Perceived leadership questions: Two questions that had as a goal to understand how much the participants perceived the main investigator as a leader. (Questions can be consulted in Annex 1.4)

- d) Perceived behavioural integrity scale (Simons et al. 2007): Scale with eight items (For example: “There is a match between my manager’s words and deeds.”) where the participants had to rate each item from 1 (Strongly disagree) to 5 (Strongly agree). The purpose of this scale was to understand if the participants perceived the main researcher as someone who fulfils her promises and has her actions in accordance with her words and so, has behavioural integrity. This scale, in the original study (Simons et al. 2007) had a reliability score of $\alpha = 0.870$. A Cronbach’s alpha test was also conducted on the perceived behavioural integrity scale on our study in order to evaluate the reliability of the collected data. The test results showed a reliability coefficient of $\alpha = 0.917$ which is considered to be an excellent reliability coefficient and even higher than the reliability coefficient from the original study (0.870). (Questions can be consulted in Annex 1.5)
- e) Demographic questions: Five questions regarding the participants’ gender, age, birthplace and socioeconomic level. (Questions can be consulted in Annex 1.6)

Before the start of the study, in order to recruit sufficient participants for all the experiments, an email with a basic description of the study and with information regarding the date, duration, place and potential monetary compensation of the experiment was sent by the investigation leader’s assistant to thousands of students from several colleges around the district of Porto (See annex 2.1). With the intention to create the perception on the participants of a consistent/inconsistent behaviour by the leader of the experiment, a second email was sent to the people who agreed to participate in the experiment. This second email, sent by the principal investigator (leader), not only warned the participants for the importance of not being late to the experiment but also stated that punctuality was a value that should be cultivated and therefore the leader promised to be in the experiment room 10 minutes before the start (see annex 2.2). A different, much simpler second email, where

there was only a reference to the place and the time the experiment started, was sent to the participants of the absent leader condition (see annex 2.3).

Before the start of every experiment all participants signed the information consent letter. (See annex 3). In the condition “The leader demonstrates a consistent behaviour where his actions are in accordance with his words” the leader of the study would arrive 10 minutes before the start of the experiment, so his actions are in accordance with what he said on the letter sent to the participants. In the condition “The leader demonstrates an inconsistent behaviour where his actions aren’t in accordance with his words” the leader of the study would arrive 30 minutes late and therefore having an inconsistent behaviour.

5 – Results

Thirty participants took part in the experiments with the condition “NCB”, forty two in the condition “CB” and thirty three in the control group “N”.

Regarding the participants’ answers to the “Perceived leadership questions”, there was a general understanding of the principal investigator as a leader with the exception of the participants from the “N” condition whose answers clearly indicate a less perception of the main investigator as a leader(see annex 4.1 for more detailed information).

Next, is presented a table with the standard deviation and average contribution to the “common project of the group” by each participant.

Table 2 – Contribution - Descriptive statistics table

	Contribution	
	Average (€)	Std. Deviation
CB	1.42	0.63
N	1.34	0.66
NCB	1.07	0.79
Total	1.30	0.70

Looking at this table, we can easily spot the differences on the average contribution between groups as standard deviation values are identical. The participants from the condition where the leader showed behavioural integrity (“CB”) contributed on average the most (1.42). They contributed on average 35 cents more than the participants from the condition where the leader was incongruent (“NCB”) between his actions and words (1.07).

A one-way between subjects ANOVA on the participants' contributions was conducted to compare the effects of perception of leader's behavioural integrity on participants' contributions for the conditions "CB", "NCB" and "N".

Table 3 – One-way between subjects ANOVA on participants contributions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.150	2	1.075	2.254	.110
Within Groups	48.639	102	.477		
Total	50.789	104			

There wasn't a significant difference between the average participants contributions for all our conditions at the $p < .05$ level for the three conditions [$F(2, 102) = 2.254$, $p = 0.110$].

Analysing the results on the "Game understanding questions", we can conclude there was a good general understanding of the game by the participants and most of them (80 out of 105) got every question right (detailed results on annex 4.2). Still, some participants failed to answer some questions correctly, therefore, not fully understanding the game. For this reason, in the following statistics regarding the contributions, only the contributions of the participants that fully understood the game will be considered.

New descriptive tables were made based only on the data of the contributions made by the participants that correctly answered all the "Game understanding questions".

Table 4 – Corrected contributions descriptive table

	Contribution	
	Average	Std. Deviation
CB	1.52	0.58
N	1.34	0.65
NCB	0.84	0.79
Total	1.29	0.71

With the results from these table we can verify that in comparison with the previous “contributions descriptive table” there is a bigger gap on the average donations between the “CB” and “CNB”. Not only the value of the average donations from the participants of group “CB” increased from 1.42 euros to 1.52 euros but also the value of the average donations from the participants of group “NCB” decreased from 1.07 euros to 0.84 euros.

A new one-way between subjects ANOVA was also conducted only on the contributions made by the participants that correctly answered all the “Game understanding questions”

Table 5 – Corrected One-way between subjects ANOVA on participants contributions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.114	2	3.057	6.951	.002
Within Groups	33.866	77	.440		
Total	39.980	79			

Unlike the first one way ANOVA test conducted, there was a significant difference between the average participants contributions for all our conditions at the $p < .05$ level for the three conditions [$F(2, 77) = 6.951, p = 0.002$].

We have found a statistically significant result, so, we need to compute a post hoc test because although we found a significant effect using the one way ANOVA test, we can only conclude that there is a significant difference between some of the conditions.

This post hoc test will allow us to find out which of our conditions were significantly different from each other.

Table 6 – Post Hoc tests on corrected participants contributions

	CB	N	NCB
CB	-	-	-
N	.570	-	-
NCB	.001*	.037*	-

*Significant at 0.05 level

Post hoc comparisons using the Tukey test indicated that the mean contributions for the “CB” condition ($A = 1.52$, $SD = 0.58$) were significantly different than the mean contributions from the “NCB” condition ($A = .84$, $SD = 0.79$). The “N” condition ($A = 1.34$, $SD = 0.65$) did significantly differ from the “NCB” condition but not from the “CB” one. These corrected results suggest that the perception on the leaders’ behavioural integrity by the participants really do have an effect on their contributions.

Next, the average and standard deviations of the answers of the participants to the “Perceived behavioural integrity scale” are presented.

Table 7 – Perceived behavioural integrity scale - Descriptive statistics table

	Perceived Behavioural integrity 0-5 scale	
	Average	Std. Deviation
CB	3.69	0.67
N	3.3	0.4
NCB	2.65	0.7
Total	3.27	0.73

Note: Each participant had to rate each sentence with a number from 1 (Strongly disagree) to 5 (Strongly agree).

The low standard deviation present on the answers to the behavioural integrity questions in the “N” condition may be due to most answers by the participants being 3 (“neither agree, neither disagree”). This probably happens because in these set of questions, the participant is asked to rate the behavioural integrity of the leader (main investigator) and in this condition (“N”) the leader was absent.

A Pearson product-moment correlation coefficient was computed to assess the relationship between the variables “Contributions”, “Perceived BI” and “Perceived Leadership”.

Table 8 – Person’s correlations between “Contributions” “Perceived BI” and “Perceived leader”

	Correlations		
	Contributions	Perceived BI	Perceived Leadership
Contribution	1	-	-
Perceived BI	0.340*	1	-
Perceived Leader	0.133	0.222**	1

*Significant at 0.01

**Significant at 0.05

There was a significant positive correlation between the “Contributions” and “Perceived BI” variables, $r = 0.340$, $n = 105$, $p = 0.00$.

There was a non-significant positive correlation between the “Contribution” and “Perceived Leader” variables, $r = 0.133$, $n = 105$, $p = 0.176$

There was a significant positive correlation between the “Perceived Leader” and “Perceived BI” variables, $r = 0.222$, $n = 105$, $p = 0.023$

In order to make sure that any effects present on the dependent variable resulted solo from variations in the independent variable, we will analyse the groups that responded on our three conditions to make sure they are as similar as possible.

Homogeneity tests were conducted between the groups in terms of gender, age and socioeconomic group. (Table 9, 10 and 11).

Table 9 - Distribution of each group by gender

Gender	CB	NCB	N	Total
Male	21	18	17	56
Female	21	12	16	49
Total	42	30	33	105

There aren't any statistically significant differences in terms of gender, in accordance with the observed differences $q = 0.767$, which is lower than $(\alpha = 0.05; 1) = 5.99$

Table 10 – Distribution of each group by age

Age	CB	NCB	N	Total
18-21	19	15	8	42
22-25	17	8	18	43
26+	6	7	7	20
Total	42	30	33	105

There aren't any statistically significant differences in terms of age, in accordance with the observed differences $q = 6.943$, which is lower than $(\alpha = 0.05; 2) = 9.49$.

Table 11 – Distribution of each group by socioeconomic level

Socioeconomic Level	CB	NCB	N	Total
Low	6	6	7	19
Medium	33	19	25	77
High	3	5	1	9
Total	42	30	33	105

There aren't any statistically significant differences in terms of socioeconomic level, in accordance with the observed differences $q = 4.743$, which is lower than $(\alpha = 0.05; 2) = 9.49$.

We analysed the homogeneity between all the different groups to make sure that no other variable would explain the results other than the independent variable that was manipulated throughout the experiment. No significant statistical differences between groups were found, therefore, the results weren't influenced by homogeneity problems between groups.

6- Discussion and Conclusions

In order to have a more accurate analysis and discussion of the results, only the contributions from the participants who fully understood the game (got every "Game understanding Question" right) were considered in this section.

The main aim of this study was to determine the impact of a leader's behavioural integrity on follower's cooperation levels. The findings of this study suggest that indeed a leader's behavioural integrity has a significant impact on followers' cooperation levels. There was a significant difference on the average contributions between the participants from the leader with a consistent behaviour condition, from the leader with inconsistent behaviour condition and from the absent leader condition. Adding to this, the results also suggest that there is a significant positive correlation between the contribution of each participant and their perception of the leader's behavioural integrity, suggesting that the higher the participants perceived their leader to have behavioural integrity, the higher would be their contribution.

The first hypothesis (**H1**) states that followers who perceive high leader's behavioural integrity, cooperate more than followers who perceive lower leader's behavioural integrity. By comparing the average contributions of the participants from the conditions "The leader demonstrates a consistent behaviour where his actions are in accordance with his words" (CB) and "The leader demonstrates an inconsistent behaviour where his actions aren't in accordance with his words" (NCB) we can see that there is a clear difference between them, being the contributions from the "CB" condition on average higher than those from the "NCB" condition. This assumption is confirmed by the results obtained in the post hoc analysis, where it was found that there was a significant statistical difference between the contributions of the participants from the condition "CB" and "NCB", therefore, the results seem to validate the first hypothesis. These findings allow concluding that indeed a leader with behavioural integrity had a significant positive effect on followers (participants) cooperation (contribution). This seems to go along with the literature previously reviewed

where a leader who had his/her actions aligned with his/her words had a positive effect on several other attitudes of the followers, such as: creativity, risk taking and affective commitment to the organization (Simons et al. 2012; Palanski and Vogelgesang 2011).

The second hypothesis (**H2**) is that, followers who perceive high leader's behavioural integrity, cooperate more than members of a group without a leader. When this hypothesis was first written, we expected the condition where the leader was active and had a seemingly positive pattern of behaviours (CB) to have a significantly more positive effect on followers' cooperation than the condition where the leader had a laissez faire, inactive type of behaviour. We had this expectation because previous literature indicated that leaders who demonstrated to have behavioural integrity had several positive effects on followers attitudes as previously mentioned. Adding to this, leaders who assumed a laissez faire type of behaviour had several negative effects on followers such as higher role conflict, role ambiguity, conflicts with co-workers and lack of motivation (Einarsen, 2007; Lewin et al. 1939). Although the participants from the condition "The leader demonstrates a consistent behaviour where his actions are in accordance with his words" (CB) averaged higher contributions than the participants from the "The leader was absent" (N) condition, after a post hoc analysis, it was found that there wasn't a significant statistical difference between the conditions and therefore this hypothesis was rejected.

Finally, regarding the third hypothesis (**H3**), it states that followers who perceive low leader's behavioural integrity, cooperate less than members of a group without a leader. Through the literature previously reviewed on absent leadership, we concluded that although several studies indicated adverse effects provoked by absent leaders (Einarsen, 2007; Lewin et al. 1939), some research still indicated that a leader by having a passive behaviour could still have positive effects on followers, such as, job satisfaction (Lippitt, 1960). Regarding destructive leadership, this doesn't happen (Thoroughgood, 2012). Destructive leader behaviours are defined as acts committed by a leader which are perceived as harmful towards followers and/or the organization (Thoroughgood, 2012), so, it is implicit in this definition that this type of leader behaviour only causes negative effects on followers. So, when comparing a behaviour which always has negative effects to a type of behaviour which has mixed effects on followers (Einarsen, 2007; Lewin et al. 1939;

Lippit, 1960), it makes sense to expect a leader with an absent behaviour to have more positive, or at least, less negative effects on followers than a leader with an inconsistent (destructive) behaviour. The results seem to be in accordance with this and when comparing the contributions of the participants of each condition we can see a clear difference. As expected, the participants from the absent leader (“N”) condition contributed on average more than the participants from the inconsistent leader behaviour (“NCB”) condition. Although this difference is not as noticeable as the one between the average contributions of the “CB” and “NCB” conditions, after a post hoc analysis, it was found that it was also a significant statistical difference. With this results, we can affirm that this hypothesis (H3) is valid and we can conclude that followers who perceive low leader’s behavioural integrity, cooperate significantly less than members of a group with an absent leader.

Regarding the perceived leadership results, we can clearly see that the principal investigator was perceived as a leader by the participants from the conditions where the leader had a consistent behaviour (“CB”) and where the leader had an inconsistent behaviour (“NCB”). The participants clearly perceived the principal investigator less as a leader in the absent leader (“N”) condition. In the “CB” and “NCB” conditions, the leader had an active behaviour whereas in the “N” condition, the leader was absent, so, these results seem to be in accordance with that.

The results regarding the perceived behavioural integrity scale indicate that the condition where the principal investigator tried to demonstrate a consistent behaviour (“CB”) had the highest score whereas the condition where the principal investigator tried to demonstrate an inconsistent behaviour (“NCB”) had the lowest score. These results suggest that the efforts of the principal investigator on demonstrating behavioural integrity on the “CB” condition and an inconsistent behaviour on the “NCB” condition were successful.

There is also a positive significant correlation between perceived leadership and perceived behavioural integrity. These results suggest that the more a participant perceives the main investigator as a leader, the more likely is in perceiving the leader having higher behavioural integrity.

The contributions seem to have a positive significant correlation with the perceived behavioural integrity evaluations on the leader by the participants. These results are in accordance with the contributions descriptive table who indicates that the highest average contributions belong to the participants from the condition where the leader tries to demonstrate behavioural integrity (“CB”), whereas, the lowest average contributions belong to the participants from the condition where the leader tries to demonstrate an inconsistent behaviour (“NCB”).

We hope that this study has an important contribute to the behavioural integrity literature and serves to highlight that something as simple as a leader having his/her actions in accordance to his/her words can have a significant positive or negative impact on the followers predisposition to cooperate.

6.1- Limitations and future studies

Regarding the main limitations of this study, it is to be noted that although using an experimental method brings several benefits, it has its limitations. Using an experimental method can make isolating an independent variable hard because it's not easy to guarantee that none other variable influences the results. It is also extremely hard to control the expectations and intentions of the participants because they know they are being tested and for that reason they might act thinking is the desired behaviour and this way the results will be biased (Monteiro, 2005). Having a relatively small valid sample is one of the specific limitations of this study. Although initially the sample wasn't small, there was a considerable percentage of participants who didn't fully understood the game, reducing the number of participants whose decisions were meaningful. There is the possibility that if the sample was bigger, some of the now insignificant differences, like the difference in average contributions between the participants from the “CB” condition and the “N” condition, could turn out to be significant. The money used to pay each participant was one of the factors that contributed the most for the limited sample size, therefore, one suggestion for

future studies would be to use other factor to test the participants' cooperation levels. On the other hand, if money isn't a problem in a future research, it would be also interesting to see if the results would still be similar if the amount of money given to each participant at the beginning of the game was considerably higher.

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Annexes

Annex 1: Qualtrics instructions and questions presented to all participants

1.1– Game instructions

- Foi selecionado aleatoriamente para interagir com mais 3 pessoas, sendo que todos os participantes recebem as mesmas instruções. Cada membro do seu grupo recebe 2€ para esta interação, decidindo quanto deste montante guarda para si mesmo e quanto (se algum) contribui para o montante total do grupo. As contribuições monetárias de cada membro do grupo (para o grupo) irão ser duplicadas e depois divididas por todos os 4 membros do grupo de forma igualitária. Ou seja, por cada 2 cêntimos que contribui para o grupo, recebe 1 cêntimo de volta, assim como cada elemento do seu grupo. Considerando as contribuições de todo o grupo, se todos os membros do grupo optarem pela contribuição máxima e contribuírem com os seus 2 euros para o grupo, a quantia a receber por cada membro do grupo irá duplicar e cada membro do grupo irá receber 4 euros. No entanto, se todos os outros elementos do seu grupo fizerem a contribuição máxima (2 euros cada) para o grupo e você não contribuir (i.e. mantiver os seus 2 euros), irá receber 5 euros enquanto os outros membros do grupo apenas irão receber 3 euros cada. Em suma, pessoalmente perde dinheiro por contribuir. Não existe decepção neste estudo, ou seja, irá mesmo ser agrupado com outros participantes, que também eles irão tomar uma decisão. Após a tomada de decisão de todos os membros do grupo a interação termina. Ao longo de toda a experiência ninguém receberá qualquer bónus e a única forma de influenciar a quantia a receber pelos membros do seu grupo é através da decisão tomada aquando da contribuição.

Acresce que 10% do total que o participante decide atribuir ao grupo será retido como taxa para auxiliar nas despesas do investigador responsável por esta

investigação. Para este cálculo não entra o valor que decide manter para si aquando da interação.

1.2– Contribution decision

- Use o slider para escolher o seu nível de contribuição.

Options: A sua contribuição: 0 -----slider-----200 cêntimos.

1.3– Game understanding questions

1- Qual a contribuição que gera maiores ganhos para o grupo como um todo?

Options: 0c 25c 50c 75c 100c 125c 150c 175c 200c

2 - Qual a contribuição que pessoalmente gera maiores ganhos para si pessoalmente?

Options: 0c 25c 50c 75c 100c 125c 150c 175c 200c

3 – Qual a contribuição que pessoalmente gera maiores ganhos para o Investigador principal do Projeto de Investigação?

Options: 0c 25c 50c 75c 100c 125c 150c 175c 200c

4 – Por favor descreva o porquê de seleccionar a quantia que seleccionou para contribuir para o projeto comum.

Options: Blank space to write

1.4 - Leadership questions

1 – Em que medida se sentiu na obrigação de contribuir?

Options: 1 – Nada/2/3/4/5 – Muito

2- Considera que o investigador principal é um líder?

Options: 1 – Nada/2/3/4/5 – Muito

1.5 - Behavioral integrity questions

1- Existe correspondência entre as palavras e as acções da investigadora principal.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

2 - A investigadora principal cumpre as promessas.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

3 - A investigadora principal pratica aquilo que proclama.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

4 - A investigadora principal faz aquilo que ela diz que vai fazer.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

5 - A investigadora principal rege-se pelos mesmos valores de que fala.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

6 - A investigadora principal demonstra ter as mesmas prioridades que ela descreve.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

7 - Quando a investigadora principal promete algo, eu posso ter a certeza que isso vai acontecer.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

8 – Se a investigadora principal disser que vai fazer algo, ela fá-lo-á.

Options: Discordo Totalmente/Discordo/Nem concordo nem discordo/Concordo/
Concordo Totalmente

1.6– Demographic questions

1 -Em que ano nasceu?

Options: Blank space to write

2 – Qual é o seu género?

Options: Masculino/Feminino/Outro

3 - Qual o seu nível socioeconómico?

Options: Baixo/Médio/Alto

4 - Em que cidade e em que país creceu? Se viveu em mais do que um local, indique aquele em que passou mais tempo.

Options: Blank space to write

5 – Quantos dos participantes presentes na sala conhece?

Options: Blank space to write

Annex 2: Emails sent to the participants

2.1 - First Email sent to the potential participants by the “Leader’s assistant”

Caros colegas,

Encontro-me neste momento a colaborar num projeto de investigação sobre tomada de decisão coordenado pela professora doutora Teresa Proença, professora na Faculdade de Economia do Porto. Durante os dias 6 e 7 de Julho, vamos realizar uma experiência comportamental de tomada de decisão em computador (com a duração aproximada de 30 minutos numa única sessão) e cuja participação inclui uma compensação monetária a pagar aos participantes.

O estudo decorrerá dia 6 numa das salas de computadores da Faculdade de Economia do Porto com uma sessão às 10 horas e outra às 17 horas. Dia 7 a experiência decorrerá novamente na Faculdade de Economia do Porto, existindo uma sessão às 17 horas.

Caso estejas interessado em participar em alguma destas sessões, envia em resposta a este email, por favor, a sessão que preferes e o teu contacto telefónico, para se proceder ao agendamento da sessão.

Grato por toda a atenção,

João Sobrinho

110402161@fep.up.pt ou joaofilipesobrinho@gmail.com

2.2– Second email sent to the participants of the experimental groups by the leader

Boa tarde,

Envio-lhe este e-mail com o intuito de lembrar que a sua participação no estudo sobre tomada de decisão realizar-se-á no dia 28, impreterivelmente às **17 horas** , na sala 305, piso 3 do Edifício Principal da Faculdade de Economia da Universidade do Porto (2 pisos acima da Biblioteca), no polo universitário da Asprela na Rua Dr. Roberto Frias. O tempo que lhe vamos ocupar será até a um máximo de uma hora e poderá ganhar até 5 euros.

É muito importante que chegue com **5 minutos de antecedência**. Trata-se de uma atividade que envolve um conjunto elevado de participantes pelo que se apela à pontualidade dos participantes. Como considero que a pontualidade é um valor que deve ser cultivado, conto estar na sala marcada, **10 minutos** antes, para fazer o acolhimento.

Cumprimentos,
Teresa Proença

2.3 – Second email sent to the control group participants by the leader

Boa tarde,

Envio-lhe este e-mail com o intuito de lembrar que a sua participação no estudo sobre tomada de decisão realizar-se-á no dia 14 de julho, quinta-feira às **10 horas** , na sala 305, piso 3 do Edifício Principal da Faculdade de Economia da Universidade do Porto (2 pisos acima da Biblioteca), no polo universitário da Asprela, na Rua Dr. Roberto Frias.

Relembro que poderá ganhar até 5 euros por apenas alguns minutos do seu tempo.

Cumprimentos,
Teresa Proença

Annex 3: Informed consent

Caro participante,

Este estudo tem como objetivo compreender os processos de tomada de decisão que envolvem interação. Procura ainda recolher as suas perceções sobre as tarefas do estudo. O estudo é composto por quatro questionários: decisão (item único), escala de perceção sobre o tipo de estudo, escala de avaliação comportamental, e uma breve caracterização sociodemográfica.

A sua participação é fundamental para compreendermos os processos de tomada de decisão com interação. A sua identidade não será conhecida, a confidencialidade será assegurada e os dados divulgados serão apresentados de um modo agregado.

Declaro que li e compreendi a informação que consta neste documento e que fui devidamente informado/a e esclarecida acerca dos objetivos deste estudo, bem como das condições de realização do mesmo. Como tal, declaro que aceito participar nesta investigação e que autorizo o tratamento anónimo dos dados agora recolhidos. Declaro ainda que tomei conhecimento de que posso desistir do estudo a qualquer momento sem receber daí qualquer prejuízo ou penalização. Mais declaro que autorizo a divulgação dos dados de modo agregado em publicações científicas, sem menção da minha identificação pessoal.

O/a participante

Pela investigadora principal

Professora Teresa Proença

Annex 4: Detailed results

Annex 4.1 Detailed results on the “Perceived leadership questions”

In the following table, it is presented the average and standard deviation of the answers for two questions that had as a goal to understand how much the participants perceived the main investigator as a leader.

Table 12 – Perceived leadership questions - Descriptive statistics table

	To what extend did you felt compelled to contribute		Do you consider the main investigator a leader?	
	Average	Std. Deviation	Average	Std. Deviation
CB	3.07	1.40	3.1	1.1
N	2.91	1.28	2.51	1.23
NCB	2.47	1.25	3.23	1.45
Total	2.85	1.33	2.93	1.33

Note: Each participant had to answer each question with a number from 1 (Strongly disagree) to 5 (Strongly agree).

The first part of this table is in accordance with table number four because the group which on average felt the least compelled to contribute was group “NCB” which was also the group that contributed less. Regarding the second part of the table, clearly the “N” group was the one whose participants on average less considered the main investigator as a leader. This makes sense because in the condition (“N”) the leader was absent.

Annex 4.2: Detailed results on “Game understanding questions”

In the table presented next, the data regarding the answers to the “Game understanding questions” is represented. An average and standard deviation from the answers to the questions “What’s the contribution that generates the most money to the group?”, “What’s the contribution that generates the most money personally?” and “What’s the contribution that generates the most money to the investigator?” is shown for each group.

Table 13 - Game understanding questions - Descriptive statistics table

	For the group		Personally		For the investigator	
	Average (€)	Std. Deviation	Average (€)	Std. Deviation	Average (€)	Std. Deviation
CB	1.80	0.51	0.21	0.5	1.81	0.48
N	1.86	0.43	0.30	0.62	1.64	0.66
NCB	1.74	0.56	0.27	0.55	1.47	0.8
Total	1.80	0.50	0.24	0.54	1.71	0.60

Regarding the answers for the first question (“What’s the contribution that generates the most money to the group?”) they average 1.80 euros which is quite close to the correct answer (2 euros). Same goes with the second question (“What’s the contribution that generates the most money personally?”) which answers averaged 0.24 whereas the correct answer was 0 euros. Regarding the final question (“What’s the contribution that generates the most money to the investigator?”) the answers averaged 1.71 which is a little bit more deviant from the correct answer (2 euros) than the answers to the other questions but nothing too relevant.

In the table ahead, the number of correct and incorrect answer for each question regarding the three groups is presented.

Table 14 – Game understanding questions – Wrong and Right answers

	For the group		Personally		For the investigator	
	Right	Wrong	Right	Wrong	Right	Wrong
CB	36	6	33	8	36	6
N	29	4	25	8	24	9
NCB	24	6	24	7	20	10
Total	89	16	82	23	80	25

Note: 80 participants got every answers correct and 25 participants got at least one of the answers wrong.

The question whose participants got more answers wrong was the ““What’s the contribution that generates the most money to the investigator?”” which goes in accordance to the data from the last table where the answers were on average the most deviant from the correct answer.